

J. PAHOLA.

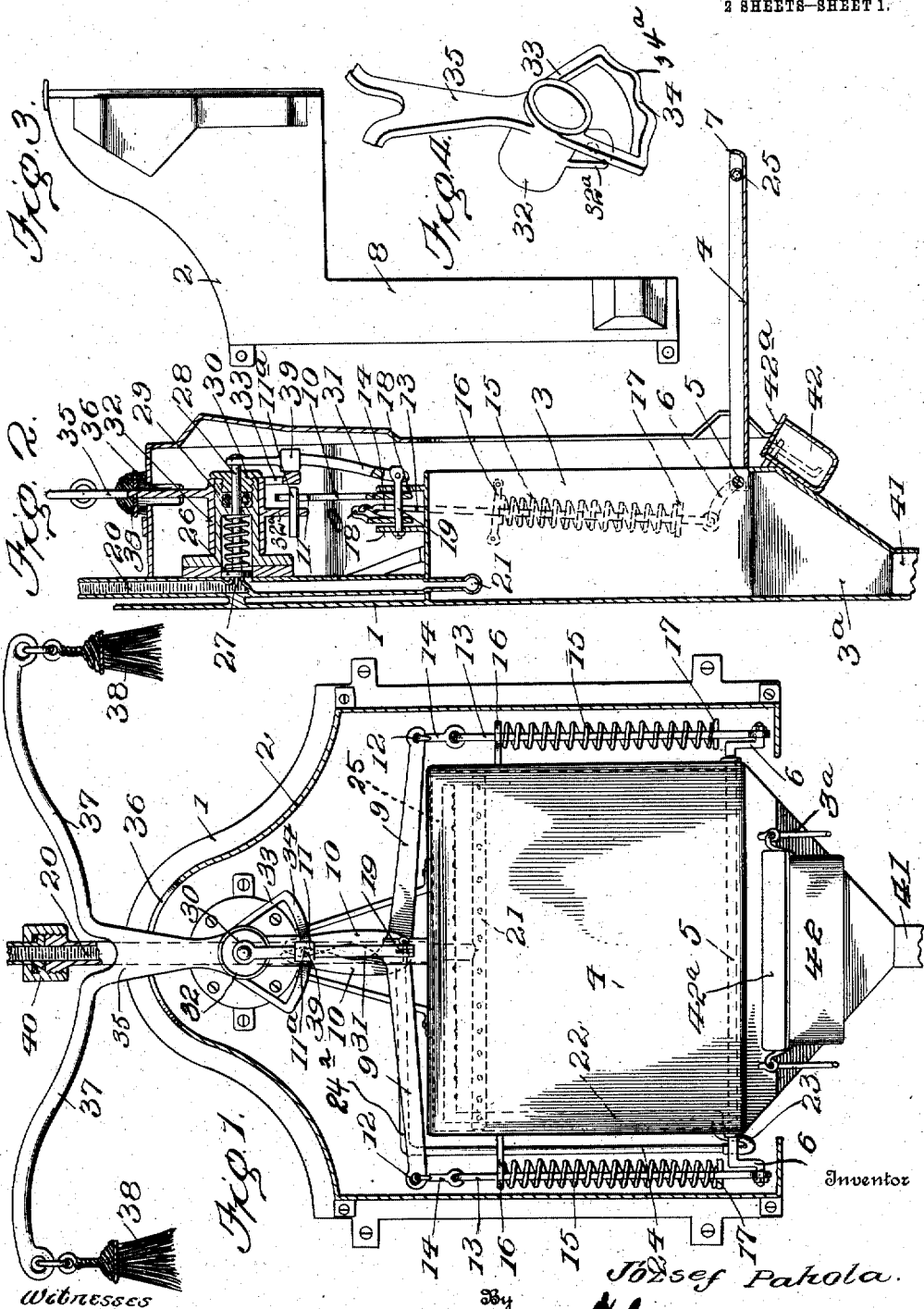
CUSPIDOR.

APPLICATION FILED JAN. 14, 1909.

Patented Feb. 21, 1911.

2 SHEETS-SHEET 1.

985,054.



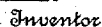
Witnesses
C. W. H. Handy.
W. H. Woodson.

Inventor
Josef Pahola.
H. H. Macy, Attorneys

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2 SHEETS—SHEET 2.



József Pakola

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H. A. Macy, Attorneys

UNITED STATES PATENT OFFICE.

JÓZSEF PAHOLA, OF BUDAPEST, AUSTRIA-HUNGARY, ASSIGNOR OF ONE-HALF TO JULIUS KOCSIS, OF NEW YORK, N. Y.

CUSPIDOR.

985,054.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JÓZSEF PAHOLA, residing in Budapest, in the Empire of Austria-Hungary, Europe, have invented certain new and useful Improvements in Cuspidors, of which the following is a specification.

The object of my invention is to provide a cuspidor for use in public places or railway cars, the object of the invention being to provide a cuspidor designed to promote sanitation, and whereby the spread of disease germs shall be successfully prevented.

The invention includes, in general terms, a receptacle or casing within which is mounted a tray which is designed to be operated by a handle or like actuating device so as to be turned down into position for use or turned up so as to permit the contents of the tray to be washed away. The operation of the tray by the handle also causes a flushing of the tray, both upon the lowering of the tray to its operative position, and upon the raising of the tray, so that thus the tray is thoroughly cleansed previous to its presentation to a user and thoroughly cleansed immediately after it has been used and closed, it being understood that the tray closes automatically.

For a full understanding of the invention and the merits thereof, and to acquire a knowledge of the details of construction, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a front elevation of one form of my invention, the outer casing being in section so as to show the internal mechanism; Fig. 2 is a vertical section through the middle of the apparatus; Fig. 3 is an elevation of a portion of the outer casing; Fig. 4 is an enlarged perspective detail view of the operating sleeve and valve cam attached thereto; Fig. 5 is a front elevation of a modified form of cuspidor; Fig. 6 is a vertical section on the line $x-x$ of Fig. 5; and, Fig. 7 is a vertical section on the line $y-y$ of Fig. 5.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

Referring more particularly to Figs. 1 to 4, the numeral 1 designates a base plate or other suitable support upon which the operating mechanism of the cuspidor is to be mounted, and 2 designates an outer inclosing

casing secured to the base plate in any suitable manner. Located within the outer casing 2 is a rectangular receptacle 3 which is mounted upon the base plate. The front of this receptacle 3 is open and fits within the opening formed in the front of the casing 2 and defined by the side portions or members 8, as shown in Fig. 3. Pivotally attached to the front opening of the box or receptacle 3, at the lower end thereof, is a tray 4 designed to receive the expectorant. This tray is constructed of glass or like material and is provided at its side edges with a rim 7. The tray 4 is mounted upon a transverse shaft 5 which extends through the side walls of the receptacle 3. Said shaft or pivot rod 5 is provided at both extremities with crank arms 6. Thus, when the shaft is rotated, the tray 4 will be raised or lowered. When the tray is raised, it closes the open front of the receptacle 3, and when lowered, it projects out through the lower opening in the casing 2 in the position shown in Fig. 2.

Pivotally mounted upon standards 18 by means of a pin 19 carried upon the upper side of the receptacle 3 are the bell crank levers 9, the outwardly projecting arms of which are formed with eyes 12 at their extremities, with which are engaged the links 14 which in turn engage with connecting rods 13 attached at their lower ends to the crank arms 6 of the shaft 5. Surrounding the connecting rods 13 are the coil springs 15. These springs contact at their upper ends with eyes 16 projecting from the sides of the receptacle 3, while their lower ends engage with stop shoulders or collars 17 attached to the connecting rods. It will thus be seen that these springs resist any upward movement of the connecting rods and act to hold the tray 4 in its vertical or closed position.

The bell crank levers overlap each other, as shown in Fig. 1, and the upwardly extending arms 10 of these levers are cut away to form jaws 11 engaging with a pin 11^a carried upon a projecting lug 32^a, as will be later described.

In order to provide for a proper flushing of the tray 4 upon its actuation by the operating handles, I provide the supply pipe 20 which is connected to any suitable source of water supply by means of the union 40. This supply pipe extends downward into the upper portion of the outer case 2 and

from this supply pipe a laterally extending branch pipe 24^a extends. This pipe then extends downward, as at 24, to a level with the bottom of the tray 4 and is there connected by a flexible connecting pipe 23 with a pipe 22 which is attached to the tray 4 at the margin thereof, as shown in dotted lines in Fig. 1. This pipe 22 extends along the margin of the tray toward the free edge thereof, and then extends transversely across the tray, as at 25, this transverse extension 25 being perforated and forming one of the means whereby the tray may be flushed. The pipe 20, below the branch pipe 24^a, extends downward into the upper end of the casing 3 and connects with a transversely extending sprayer pipe 21 so located that streams of water will be directed upon the face of the tray 4 when it is in its raised position. The pipe 20, above the branch pipe 24^a, is provided with a valve seat 27 upon which is fitted a valve 26 mounted upon a stem 28. This valve is normally forced toward its seat by a coil spring. The valve and its stem are contained within a casing or chamber 29 closed at its end by a cap 30 through which the valve stem 28 protrudes. The chamber 29 is cylindrical in form, and rotatably mounted upon the cylindrical chamber is the sleeve 32 having an upwardly projecting shank 35 from which extend handles 37 in opposite directions, these handles carrying at their ends the tassels 38 whereby they may be operated. The shank projects out through a slot 36 formed in the upper end of the casing 2. Fast to the front portion of the sleeve and projecting downward therefrom are the arms 33 having at their extremities a cross bar 34 having a cam face 34^a. Rearward of the arms 33 is the downwardly projecting lug 32^a previously referred to which lug carries the outwardly projecting pin 11^a. Attached to the extremity of the valve stem 28 is an arm 31 which at its lower end is pivoted to the outwardly projecting end of the pivot pin 19, it being understood that this pin is fixed, as far as longitudinal movement is concerned, and therefore forms a fulcrum for the arm 31. This arm 31 is formed intermediate of its ends with an enlargement 39 adapted to be engaged by the face of the cam 34^a. It will be seen from Fig. 4 that this cam has a depressed middle portion, opposed projecting portions on each side of the depressed middle portion, and each have two outer depressed portions. Hence, as the sleeve 32 rocks and the cam is moved past the enlargement 39, the enlargement 39 will be raised upon one or the other of the projecting portions on each side of the middle depressed portion of the cam and the valve stem 28 will be raised, and then forced inward by the spring as the outer depressed portion of the cam is reached, permitting the arm 31 to move in-

ward. It will be seen that this movement of the valve takes place upon the depression of either one of the handles 37. As the sleeve 32 rotates upon the cylindrical valve chamber, the pin 11^a will be carried to one side or the other and engage with one or the other of the upwardly extending arms 10 of the bell crank levers 9. The outward movement of either of these upwardly extending arms will act to rock the bell cranks, thereby drawing up upon one or the other of the arms 13, thus rotating the shaft 5 and depressing the tray 4 to the position shown in Fig. 2. When the handle 37 is released, the reverse movement will occur. The cam 34^a will once more move the valve 26 away from its seat, and water or disinfectant will pass downward through the pipe 20 and out through the holes in the transverse pipe 21 which forms the lower end of the pipe 20, these perforations or spraying holes being so arranged that the liquid will be sprayed upon the inside face of the plate 4 as this plate moves upwardly to its vertical position.

The lower portion of the box 3 is preferably hopper-shaped, as at 3^a and is connected to a discharge pipe 41 designed to carry off the matter washed from the plate or bowl 4. A receptacle 42 is also attached to the exterior of the box 3 and has a lid 42^a, this receptacle being designed for the reception of partially smoked cigars or other solid matter. It will be seen that the construction heretofore described embodies a receptacle having a tray pivoted thereto and which forms practically a door for the front of the receptacle. When the tray is in its vertical position, the receptacle is closed. Furthermore, provision is made whereby the inside face of the tray is flushed with water or disinfectant, both upon an outward movement of the tray and upon a closing movement thereof, and that the tray is moved outward to its receiving position by means of manually operated mechanism, and that it returns automatically to its vertical position when the operating handles are closed.

In Figs. 5, 6 and 7 I have shown another embodiment of my invention which, however, includes some of the elements previously described. Thus, the modified form includes a tray which is adapted to be moved down into a horizontal or receiving position by suitable operating means, but which is turned up automatically into its depositing position. In this modified form also I have provided means for flushing the tray, both upon its outward and its inward movement. In addition thereto, I have provided a bowl within which the tray is supported, and have provided a cover for the top of the bowl, which closes the bowl when the tray is turned into its normal or depositing position.

The construction shown in Figs. 5, 6 and

7 consists essentially of a base plate 1 and a casing 43 supported on the base plate, said casing having a middle bowl C and a water reservoir B which extends down on one side 5 of the bowl C and which extends transversely back of said bowl compartment C and back of a compartment A in which the spring or returning mechanism is supported. In this form of my invention I provide a 10 base plate 1 and a casing supported on the base plate having the two opposed outwardly projecting compartments B and A. The compartment B I shall designate the pumping compartment, while the compartment A 15 is for the purpose of containing the spring-actuating mechanism for returning the parts to their normal position. The compartment B is also a water-containing compartment and communicates at its rear upper portion 20 with a compartment *b* which extends transversely across the back of the casing and back of the compartment A. Thus, the compartments B and *b* together form a water reservoir adapted to contain a large quantity 25 of water or disinfectant for flushing purposes. The bottom of the compartment *b* is indicated by the character *b'* in Fig. 7. Mounted between the projecting compartments B and A is the bowl C. The lower 30 end of this bowl extends partially under the compartment *b* and is attached to the bottom *b'* thereof. The bowl is hopper-shaped and its neck *c* projects down into the box or casing 44 to be hereafter described. The 35 upper end of the bowl is open, but is adapted to be closed by a cover 46 having projecting handles 46^a at its front edge, whereby the cover may be manually raised. The cover has an air-tight engagement with the 40 upper end of the bowl. Attached to the cover is a cord 47 which passes over a pulley 47^a attached to the base plate 1, this cord passing down through a groove in the base plate to the end of a treadle 48 which is 45 pivoted at its forward edge. Upon a depression of this treadle, it will be obvious that the cover will be raised. Attached to one side of the cover is a link 54 which extends down into the pumping compartment, 50 as shown in Fig. 6, and is there attached to a rocking beam 55 which is mounted upon a hollow standard 63. The pumping devices will be later described. Pivoted upon the other side of the cover 46 is the link 45 55 which extends down through a slot in the top of the compartment A and is pivoted at 50 to a link 49 which passes through an outwardly projecting flange *d'*. The lower end of the link 49 is formed with a head, and between this head and the flange *d'* is located 60 the spring 49^a. When the cover is raised, the spring is compressed, and therefore when the cover is released, it will expand, drawing the cover 46 down upon the top of the 65 bowl and closing the same. Mounted upon

a transverse rotatable shaft 4^a which extends through the bowl C is the tray 4, and this shaft is connected by a link 45^a to the pivotal point 50 of the links 49 and 45. Thus, when the link 45 is depressed, the shaft 4^a will be 70 rocked and the tray will be turned up into a vertical position within the bowl C. When, however, the cover is raised, then the tray will be turned in a horizontal position, as shown in dotted lines in Fig. 7. It will 75 be seen that under the influence of the spring 49^a, the tray 4 is normally held in its vertical position. In order to provide a means for flushing and cleansing the tray automatically, I provide a pumping system 80 which is operated by the reciprocation of the cover 46 in either direction to discharge a jet of water or disinfectant upon the inner face of the tray 4. In the arrangement of the mechanism I have 85 illustrated, the pumping compartment B which is intended to be filled with liquid disinfectant is provided with a pair of pumping cylinders 60 in which operate pistons 61, connected to the walking beam 55 mounted, 90 as before remarked, upon the standard 63. The ends of the walking beam are connected to piston rods leading to the pistons 61, and as before stated, one end of the walking beam is connected to the link 54. The pump- 95 ing cylinders are connected by suitable passages 65 with an inlet nozzle which opens into the casing B, the casing being provided with a vane cock. The pumps are also connected by suitable ports to a flexible pipe 67 100 which extends up through the compartment B and connects to a transversely extending pipe 51 which extends across the rear of the bowl C in such position that by means of perforations in the pipe, the tray 4 may be 105 flushed or cleansed. Of course suitable valves are provided in the ports or passages 65 for controlling the passage of liquid there-through so that when one pump is sucking in, the other pump will be forcing liquid out. 110 The sides of the casing wall forming the compartments B and A are provided with openings closed by plates 70, said openings permitting access to be had to the compartments B and A for cleaning the same or re- 115 pairing the mechanism carried therein. The upper end of the compartment B is provided with a hand hold and a stopper 71, whereby water may be filled into the compartment B and the reservoir *b*. Attached to the base 120 plate 1 and mounted immediately beneath the casing before described, is a bracket 53 which supports a casing 44. This casing is held in place by a locking frame 52 having a hasp 52^a, whereby the locking frame may be 125 locked upon the casing 44. The front wall of the box or casing 44 is provided with a small receptacle 42 which, like the receptacle 42 previously described, is for the purpose 130 of receiving cigars and other solid matter.

The operation of both forms of my cuspidor is obvious. In the first, the actuation of either of the handles 37 tends to throw open the tray 4 and at the same time, upon a downward movement of the tray, to eject a jet of water upon the tray. The same operation takes place when the tray is raised. The construction shown in Figs. 5, 6 and 7 operates in the same manner. When the treadle 48 is depressed, the cover 46 will be raised and the tray 4 lowered to a horizontal or receiving position. After expectorating upon the tray, the user will step off the treadle 48, whereupon the springs 49^a will cause the tray to close, and the saliva will pass downward in the bowl C and into the compartment 44. As the cover moves in either direction the pump connections will act to operate the pumps, and a certain amount of cleansing water or disinfectant will be ejected upon the tray 4 and into the compartment 44.

It will be seen that my device is extremely sanitary and that provision is made for a complete closure of the tray which receives the saliva, and a complete flushing of the same. Furthermore, and very importantly, the device is made easy of operation. Unless this is the case, it is not liable to be used, and hence the necessity of providing the opposed handles whereby it may be operated from either side, and the treadle whereby it may be operated by merely stepping upon it, and further for providing the double cam shown in Fig. 4, which actuates the flushing valve upon a movement in either direction. It will be seen further that my device is peculiarly sanitary, for the reason that disinfectant or cleansing liquid is ejected upon the tray when it is lowered, that is, just before it is used, thus preventing any germs which might be upon the tray from floating off into the air, in case the tray becomes dry. Again, the tray is washed after having been used. Furthermore, in the second form of my device the tray is inclosed within a bowl or casing which is normally covered. It will be seen that in the first form of my device the tray forms the cover or closure for the compartment B, which compartment corresponds to the bowl in the second form of my device, while in the second form of the device, the tray does not form a closure for the bowl, though it is turned into a vertical position, this closure being formed by the cover 46.

Having thus described the invention, what I claim is:—

1. In a cuspidor, a casing, a transverse crank shaft mounted on the casing, a tray attached to the crank shaft and adapted to be turned into a vertical or a horizontal position, springs holding said tray in a vertical position, operating devices engaging said crank shaft to rotate the tray into a hori-

zontal position, a spray pipe located within the casing and behind the tray, and means for ejecting liquid from the spray pipe, both during the opening movement of the tray and during its closing movement.

2. A cuspidor having a casing with an outlet at its lower end, a tray pivoted to said casing in an opening thereof, and forming the face of said casing when in a vertical or closed position, said tray being pivoted at its lower end for an opening movement, operating rods, cranks on the receptacle engaging with the operating rods, actuating levers for drawing said rods upward to open the tray from the casing, springs acting on the rods to return the tray to a vertical or closed position, and flushing devices mounted within the casing rearward of the tray, connected to a water supply and provided with means whereby liquid shall be ejected on the inner face of the tray, both upon its opening and its closing movement.

3. In a cuspidor, an outer casing, an inner casing, a tray fitting in the front of the inner casing and closing the same, but adapted to be turned outward through the outer casing into a horizontal position, flushing devices extending into the inner casing behind the tray, when it is closed, and means contained in the casing for operating the tray and for simultaneously operating the flushing devices upon a movement of the tray.

4. A cuspidor including a casing, a tray forming the front of said casing and pivoted thereto, said tray being adapted to be opened away from the casing into a horizontal position, means for returning the tray to a vertical position closing the casing, a flushing pipe, located within the casing and connected to a source of liquid supply, a lever for operating the tray to turn it into a horizontal position, and a valve connected to the lever to permit the flow of water through the flushing devices, both upon an opening movement of the tray and upon a closing movement thereof.

5. A cuspidor including a casing, a tray fitting in the front of the casing and forming a closure therefor when in a vertical position, opposed operating levers connected to the tray to turn the same into a horizontal position upon a movement of the levers, springs for returning the tray to a vertical or closed position, a supply pipe, a spray pipe connected to said supply pipe and mounted rearward of the tray, and a valve controlled by said levers and operating to eject liquid upon the tray, both upon the opening movement of the tray and upon a closing movement thereof.

6. A cuspidor including a casing, a door pivoted to the casing and closing the front thereof when in a vertical position, opposed bell crank levers, one arm of each lever being

connected to the door to open it upon a movement of the lever in one direction; flushing devices for the tray located behind the same, and an actuating lever engaging with said bell crank levers and adapted to actuate one of the bell crank levers upon a movement in one direction and the other of said bell crank levers upon a movement in the other direction.

7. A cuspidor including a casing, a door forming the front of said casing and pivoted thereto, cranks upon the door, opposed bell crank levers having connections to said crank, springs for holding said levers in such position that the door is normally held closed, spraying devices located within the casing behind the door, and a lever pivotally mounted in the casing and having oppositely projecting arms, said lever having a member projecting therefrom and engaging one or the other of the bell crank levers upon a movement of the lever in one or the other direction.

8. A cuspidor including a casing, a tray pivoted to the casing and when closed forming the front thereof, said tray having opposed cranks attached thereto, opposed bell crank levers mounted upon the casing and overlapping each other, the laterally projecting arms of the bell cranks being connected by links to said cranks on the tray, springs for holding said tray closed, an operating lever pivoted above the bell crank levers and having opposed handles, said lever having a member engageable with either one of the bell cranks, a spray pipe located inside the casing and adapted to eject liquid upon the inside face of the tray, a valve controlling the escape of water to the spray pipe, and means on the operating lever for actuating said valve upon a movement of the lever in either direction.

9. A cuspidor including a casing, a door pivoted to the lower end of the casing and forming the front thereof, said door being provided with opposed cranks, opposed bell cranks mounted above the door, the laterally projecting arms of the bell cranks being connected to the door cranks, a supply pipe having spraying nozzles located within the casing, a spring-pressed valve normally closing the supply pipe, an operating lever having opposed handles and engaged with said bell cranks to operate one or the other thereof upon a movement of the operating lever in one or the other direction, a cam mounted upon said lever, and means for engaging the controlling valve by said cam upon a movement of the lever in either direction to open the supply pipe.

10. A cuspidor including a casing, a tray

pivoted to the lower end of the casing and forming when closed the front thereof, opposed bell cranks connected to said door to operate the same, springs for normally holding the door in its closed position, a spray pipe located interiorly of the casing and having a liquid supply pipe, a valve chamber intersecting said supply pipe, a valve therein having an outwardly projecting stem, a spring holding said valve closed, an operating lever, a sleeve forming the pivotal support for the operating lever and mounted upon the valve chamber to rotate therearound, said lever, at its lower end, engaging with one or the other of the bell crank levers as the operating lever is moved in one direction or the other, a cam projecting from said lever and having opposed elevations on either side of the middle of the cam, and a rod connected at one end to the valve stem and having a portion thereof engaging with said cam.

11. A cuspidor including a casing, a tray pivoted to the lower end of the casing and having cranks, an operating lever, means for moving the tray into a horizontal position upon the operation of said lever in either direction, a supply pipe having a spraying nozzle located behind the tray, a valve chamber intersecting said supply pipe, a valve in said chamber, a valve spindle, a spring for holding the valve closed, a cam connected to said operating lever to move therewith, and a connection between the cam and said valve spindle.

12. A cuspidor including a casing, a tray pivoted to the casing, spraying devices located within the casing, a supply pipe therefor, a valve chamber intersecting the supply pipe, a valve therein, a spindle, a spring holding the valve closed, a sleeve mounted upon said valve chamber for rotation therearound, an operating lever connected to said sleeve, means connecting said sleeve with said tray to lower the same upon a rotative movement of the sleeve to one or the other from a middle position, a cam mounted on the sleeve and having a middle depressed portion, elevations on either side of the depressed portion, and depressions beyond said elevations, and a member attached to the valve spindle and engaged by said cam, whereby the valve may be operated upon a movement of the cam in either direction.

In testimony whereof I affix my signature in presence of two witnesses.

JÓZSEF PAHOLA. [L. S.]

Witnesses:

EDE HOLLÓRY,
GINDON MORVOTZ.